

Wilmington

District News

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$$U(Z) = \left(\frac{TH}{L} \right)^2 \frac{C}{2} \frac{\cosh [4\pi(z + d)/L]}{\sinh (2\pi d/L)}$$

Maximum Wave Velocity!

*The Science
of Surfing*



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On the Cover:

Do science and surfing mix? Find out on pages 8 and 9.

PHA? Is Yours Current?

Do you have a Position Hazard Analysis (PHA)? Do you even know what a Position Hazard Analysis is? Here are a couple of definitions. It is an assessment of the hazards associated for your position. It determines safety training and personal protective equipment required for your position, with the intent of controlling or eliminating all hazards. The definition in the Safety Manual reads as follows: "a documented process by which the duties (or tasks) of an employee's position are outlined, the actual or potential hazards of each duty are identified, and measures for the elimination or control of those hazards are developed."

All TEAM members are required by the Safety Manual to have a current PHA. A PHA should be provided to new TEAM members on the first day of employment. Supervisors should not just provide it to them, but should also discuss it with them and use it as a tool to procure PPE, and to plan any safety training that may be required. If you change positions, your PHA should be changed to match the new position. Supervisors should discuss the PHA with TEAM members at least once a year.

An Activity Hazard Analysis (AHA) is generally required for all field operations. The AHA is "a documented process by which the steps (procedures) required to accomplish a work activity are outlined, the actual or potential hazards of each step are identified, and measures for the elimination or control of those hazards are developed." I consider it to be a type of work plan that identifies the hazards with each step of the work plan, and recommends controls for those hazards. Examples of a few activities requiring AHAs are: dewatering a stilling basin; various maintenance on dam intake structure; cavitation repair at a hydropower plant; vibracore sampling aboard the SNELL; subsurface investigations at a proposed construction site; control burns at our lake projects; painting a radio tower; and deploying buoys at our lake projects. Please note these are just a few. AHAs are primarily required for activities in Operations Division, Construction Branch, and Geotechnical Section. In some situations, activities performed by other offices may require an AHA. All of our construction, dredging and some service contractors should prepare AHAs.

PHAs and AHAs are living documents. They must be updated when new hazards are found. Updating should include identification of the hazard, and the actions necessary to control or eliminate the hazard. Failure to update can and often does result in serious injury. They must also be updated when new safety regulations are implemented.

District Partners With NC Aquariums

By Bill Adams

The Wilmington District recently participated in a ceremony that designated the North Carolina Aquariums as the Nation's 18th Coastal Ecosystem Learning Center. North Carolina has three aquariums located at Roanoke Island, Pine Knoll Shores, and Fort Fisher that were all designated. The Coastal Ecosystem Learning Centers are a network of aquariums and other marine educational facilities that work in partnership with federal agencies to educate the public about our Nation's coastal resources. Through designation, it joins the elite of the Nation's aquariums. Other designated aquariums include the National Aquarium in Baltimore, Seattle Aquarium, New England Aquarium, and the Monterey Bay Aquarium.

The Wilmington District has had a long-standing informal relationship with the North Carolina Aquariums, sharing speakers and information on a variety of subjects over the years and using the aquariums as a forum for interacting and sharing ideas with the public. At the ceremony, Colonel Ray Alexander formalized that relationship, committing the district to continued support of the education mission of the aquarium as manpower and budget allow. In addition



District Engineer COL Ray Alexander poses with other distinguished guests at the North Carolina Aquarium at Fort Fisher.

to Colonel Alexander, the designation ceremony was attended by Congressman Mike McIntyre; Ms. Lynn Scarlett, Assistant Secretary of the Interior; Mr. Benjamin Grumbles, Assistant Administrator of EPA; Mr. Danny McComas of the NC House of Representatives; Mr. Bill Ross, Secretary of the NC Department on Environment and Natural Resources; and a host of other agency heads. After the ceremony and luncheon, agency representatives retired to a

meeting room to begin the process of building a strong education coalition in coastal North Carolina. In so doing, the Wilmington District continues an active commitment to the Corps' Environmental Operating Principles that call for integrating and sharing knowledge (Principle 6) and listening to the views of others (Principle 7).

*For more information,
visit the CELC website at*

<http://www.coastalamerica.gov/text/learning.html>

Stirrat Wins USACE Civil Emergency Manager of the Year



SCOTT MANERS PHOTO

Ron Stirrat surveys damage at Cape Hatteras after Hurricane Isabel from a Blackhawk helicopter.

"In emergency management it's a matter of delegating. But in delegation it's communications and leadership that makes people execute what the intent was."

— Ron Stirrat

Ron Stirrat, who retired from the Marine Corps and has made USACE his second career, knows how to manage and organize on a large scale. His innovative ideas and endless energy earned him the title of the U.S. Army Corps of Engineer's 2003 Civil Emergency Manager of the Year. Cited for greatly enhancing the Wilmington District Emergency Operations program, Stirrat's contributions have had a favorable national impact on the Readiness Management Program. He spearheaded a renovation of the District's Emergency Operations Center, reconfiguring the functional layout and procuring significant technical improvements.

Stirrat published the District's first Continuity of Operations Plan that became the model for the Division and has been requested throughout the Corps. He revised and updated the District Dam Failure Plan and Hurricane Response Plan, and moved the Inspection of Completed Works program in its entirety under the Emergency Management program, instituting a two-year cycle of scheduled inspections for the 38 Public Law 84-99 projects within District boundaries.

On the military side of the house, Stirrat serves on the Port Readiness Committee for the North Carolina State Ports, which are important points of embarkation for military

equipment shipped in support of XVIII Airborne Corps, Fort Bragg, and II Marine Expeditionary Force, Camp LeJeune. And one significant aspect that put Stirrat ahead of other EM managers for the emergency manager of the year is his direct knowledge of security matters stemming from his time in the military. Three years ago he led a team that analyzed the critical structures of our District dams through Risk Assessment Methodology for Dams in response to the September 11th terrorist attacks. Additionally, he also created a matrix for Force Protection levels at Wilmington's projects that has been adopted Corps-wide.

What it took Stirrat to get the award goes back several years. He credits his time in the Marine Corps for giving him skills that aren't written in books. So, when it comes to preparing for a hurricane and managing a group of Emergency Operations folks when that hurricane hits, Stirrat has his bases covered.

Some situations require more on-the-spot decision-making like he experienced in the Marine Corps, but now he has a bit more flexibility to analyze a situation before it happens. "You know a hurricane's coming, such as Hurricane Isabel during 2003, and you know FEMA's Pre-scripted missions that are going to be executed. And yes, there are going to be some hectic days in there, especially day one through about day four or five. After that it settles down to a normal, 12-hour execution."

Stirrat stresses that teamwork is essential for working in emergency management. While it takes a seasoned manager to make sure things are running smoothly the team can't function without experienced team players.

"I could not have accomplished these tasks without the help of a very experienced and hard working staff to support the Emergency Management mission. And when a storm is on the horizon the Wilmington District team members rise to the event volunteering to get the job done! I am very fortunate to have such a rewarding job that provides the satisfaction of bringing a team together and executing relieve missions to our nation during the time of disasters."

Editor's note:

The announcement of the Civil Emergency Manager of the Year is usually done in late summer for the previous year's winner.

However, due to the frequency of hurricanes this past season, the announcement was made in December.



Thinking ahead...

Three years ago Stirrat led a team that analyzed the critical structures of our District dams through Risk Assessment Methodology for Dams in response to the September 11th terrorist attacks.

Franklin Wins Partnership Award From NC Land Trust

David Franklin is committed to helping preserve North Carolina's natural resources. So much so that he earned the Government Conservation Partner of the Year from the North Carolina Land Trust Council for his work helping to develop the Ecosystem Enhancement Program (EEP).

Created to provide compensatory mitigation for the transportation projects, the EEP initiative was formed through a partnership among the U.S. Army Corps of Engineers, the NC Department of Environment and Natural Resources and the NC Department of Transportation. And it was years in the making.

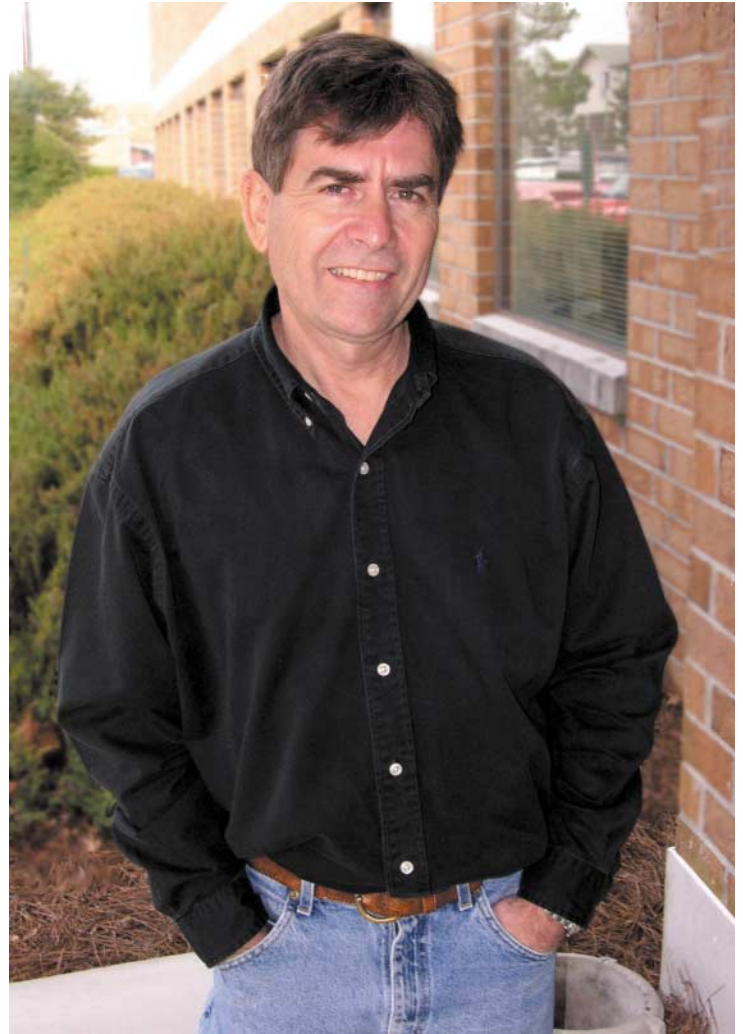
The EEP grew out of a process improvement initiative in the Spring of 2001 that was designed to address shortcomings of the existing, highly-complex Section 404/NEPA merger process. The merger process, which ensures close coordination between federal and state resource agencies and the North Carolina Department of Transportation, was designed to integrate transportation decisions, documentation requirements, and environmental permitting required by Section 404 of the Clean Water Act. To make sure proposed projects reach fruition, all agencies work together to reach consensus at four key decision points during planning, design, and environmental documentation of a proposed road project. All partners have to agree on:

- Project purpose and need
- Alternatives carried forward
- A least environmentally damaging practicable alternative
- Additional avoidance and minimization

Thus, projects always had to meet environmental standards before moving further toward construction.

"Basically, we mapped out the process visually to see why problems were occurring and where the improvements could be made." After addressing the merger process, the Corps and its North Carolina partners went on to tackle the issue of compensatory mitigation and that is when the idea of the EEP was conceived.

The benefits of the EEP have been excellent. The program goals are to provide high quality, successful mitigation to compensate for NCDOT project impacts. The mitigation is focused to address watershed based needs years in advance of the actual road impacts. In order to help get the EEP up-and-running, the EEP contracted with the Conservation Trust of North Carolina in October of 2003 to assist it in identifying the State's highest quality wetlands and



David Franklin

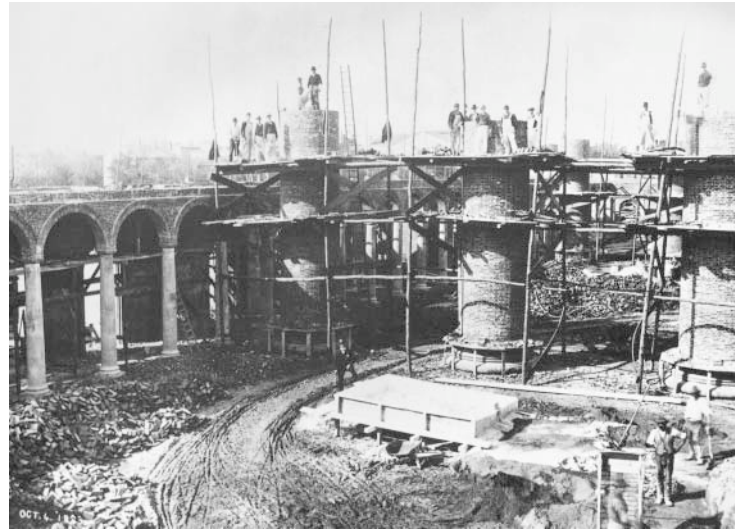
streams needing protection. Franklin says that one of the neat things about the EEP is its ability to partner with other programs to maximize the investment. The numbers that equate to preservation are impressive. To date 24,000 acres have been preserved through these partnerships. This includes 4,900 acres of wetlands and 96 miles of streams funded specifically by the EEP. Funding for the program originates from existing federal highway dollars that are allocated to the state for offsetting wetlands and stream losses and other water quality damage associated with transportation projects. Franklin says things are working so well that it's starting to get some attention.

"We don't know of any other program like this in the country. In fact, there's been a lot of interest in what we're doing. Other DOTs are coming to North Carolina to hear about the EEP. I've also been invited to other states by the Federal Highway Administration to give talks about the EEP."

National Buildings Museum in D.C. Has Corps Influence



These 75 foot columns dwarf visitors to the National Buildings Museum.



When construction was completed of the Great Hall where the columns are located it stood approximately 15 stories high.

If you ever have the chance to go to USACE headquarters for a meeting, or if you simply plan to visit Washington, D.C. you might want to stop by a museum that was designed by a brilliant Army engineer. The National Buildings Museum sits adjacent to the GAO Building where our headquarters is located at 7th and G Street. It was designed by Montgomery C. Meigs and originally was home to the United States Pension Bureau. According to curators at the museum, when Meigs was Quartermaster General in charge of provisions during the Civil War, he began designing the structure in what was considered to be a revolutionary building. What makes the visit to this museum worthwhile are its awesome trademarks; 75-foot columns that are the tallest free-standing columns in the U.S.



This side of the museum is directly across the street from the G. Street entrance of the GAO building.

Science + Skill + Timing =



Maximum Fun Surfing!!

Doug Piatkowski takes advantage of hurricane-induced waves at Wrightsville Beach.

SURFING PHOTOS COURTESY JOHN SUTTON

Story by Hank Heusinkveld

Doug Piatkowski grew up a landlubber in New Jersey. But when he moved to Florida when he was in the sixth grade he was surrounded by surfing near his new home in Boca Raton. The surf bug bit him so hard and it lasted so long that he moved to Wilmington to pursue his undergraduate and masters degrees in marine biology at UNCW... and to surf!

Piatkowski is a true surfer. That is, he doesn't waste his time on the water waiting for waves to come to him. Rather, he relies on the tools of science to maximize his fun. And since he's able to read and understand several types of weather patterns you could call him an amateur weatherman.

"There's a lot of science involved with surfing, but you'll find even grommets (young surfers) will know how to read buoys and wind directions," he says. "There are websites that have live cameras up and down the east coast that show you video in real time. So, if you

can understand a little bit of the weather patterns, including wind speed and direction, you can really plan when and where it's going to be best."

Piatkowski says timing is critical for catching the best waves. The difference between an enjoyable experience and dismal failure could be a matter of an hour.

"I can get on a website to read what the weather patterns are going to do hourly all day long. So, if there are 30-mile-an-hour northeast winds I know it's going to be big and choppy and nasty on the beach. So, if I went to the beach at, say noon, I'd catch probably the worst waves I've surfed all year. But if I just waited three more hours until the wind shifted offshore from land it would have been the best day of the year."

In the surfing community, Piatkowski says there's a bit of wave envy. Surfers challenge each other on their ability to find the best places to surf.

"Surfers have this thing about 'who caught it better.' It's a finding game; who can find the best waves. So, that's



HEUSINKVELD PHOTO

Even within the confines of his cubicle, Piatkowski keeps daily reminders of his passion for surfing like his surfboard clock and pictures of rolling surfs.

"One of the reasons I became a marine biologist is because of my love of the ocean from surfing. Until you become a surfer it's truly hard to understand what it's like."



where the weather reading comes in and the understanding of local breaks and what the bottom contour is like and what the swell window is like where you're at."

Piatkowski says there's no shortage of excitement while surfing. He spends up to five hours at a time on his board, and along with that time comes plenty of encounters with seas creatures. He delights in recalling the time when he was in the middle of pods of dolphins playing and feeding. But an encounter with one particular animal is one for the

books. He was at Masonboro when he finished the inside of a wave and jumped off his board and kicked something in water. At first he thought it might have been somebody swimming.

"I crawled back on my board, then a fin popped up right next to me. It tried to swim by me, but the fin kept hitting me. I freaked out and started paddling

faster. The next thing I knew, to get by me, it frantically jumped out of the water and flopped on my back and flopped back on the other side then swam away."

The creature in question was what Piatkowski believed to be a four-foot black tip shark. He says he told his friends about the incident when he paddled back out. But for some of them it was more or less an outlandish "fish tale."

"Some of them believed me, some of them didn't," he says with a grin, "but when they saw my face...they believed me! So, it's not uncommon to see sharks in the water out there. It's just pretty uncommon to kick one and have it jump on your back as well!"

For some surfers, danger is an abstract thought. Waves kicked up by an approaching hurricane might frighten landlubbers, but surfers will cautiously take advantage of them. And when it comes to sea creatures, even sharks, surfers just accept them as a small part of the sport. Besides, they make excellent conversation topics.

"By the time I'm 80 years old telling that shark tale it'll probably be a 15-foot shark!"





Website Highlights

Archie Carr Center for Sea Turtle Research: Sea Turtle Online Bibliography
<http://accstr.ufl.edu/biblio.html>

Jan Wutkowski

The Sea Turtle Online Bibliography was developed by the Archie Carr Center for Sea Turtle Research (ACCSTR) at the University of Florida. The Bibliography "includes over 12,000 references on all aspects of sea turtle biology, conservation and management." Searches can be conducted using Keyword(s), Author's Name, and/or Title.

Picasso Photos

<http://www.bath.ac.uk/pr/releases/picasso.htm>

This article describes the Picasso-effect software that is part of a suite of imaging technologies developed by computer scientists at the University of Bath. The scientists have found a way to turn photo albums, videos and movies into drawings, paintings, and cartoons. The researchers were able to "teach the computer how to pick out the elements of photographs that, until now, only humans have been able to recognise as important." Basically, the computer identifies elements, such as a nose, eye or mouth, and proceeds to cut the images into chunks. The chunks are then statistically shuffled and then randomly-selected chunks are distorted to create a 'cubist' composition. The author ends the article with a discussion of some of the applications for this "automated art" in animation.

Aquatic Plant Management Society

<http://www.apms.org/>

The aims of the Aquatic Plant Management Society (APMS) "are to assist in promoting the management of nuisance aquatic plants, to provide for the scientific advancement of members of the society, to encourage scientific research, to promote university scholarship, and to extend and develop public interest in the aquatic plant science discipline." Visitors may search past issues of the Journal of Aquatic Management by author and keyword, as well as browse Tables of Content for 42 volumes from 1962 to the present. A number of articles from the Journal are available for viewing and download, as well as copies of the APMS newsletter.

GUIdebook: Graphical User Interface Gallery

<http://www.aci.com.pl/mwichary/guidebook/index>

But what about the world of graphical user interfaces, such as the icons that populate many of our computer screens? Curious visitors will find their fill at this online museum of graphical interfaces, the icons that populate many of our

computer screens, many of which even some long-time computer users may have forgotten about. Divided into categories such as icons, sounds, components, and interfaces, the site contains over 2675 pictures and 651 icons from 51 interfaces.

USGS Coastal and Marine Geology Program (CMG)

Infobank

<http://walrus.wr.usgs.gov/infobank/>

The USGS created the Infobank to educate users about the data and information collected by the Coastal and Marine Geology research group, which conducts "multidisciplinary scientific research in the coastal and offshore areas ... and in other waterways of the United States." The website provides numerous maps and data for bathymetry, seismology, geodetic, magnetics, and many additional data sets collected by the group.

Cooking For Engineers

<http://www.cookingforengineers.com/>

Computer Engineer Michael Chu (a hardware application engineer working for a large semiconductor manufacturer in Silicon Valley) created this website as a repository of his hits and misses in the kitchen. Several years ago he started hosting weekly dinner parties to watch "Family Guy" episodes with his peers. The recipes, notes, blog and pictures are the result of the "cheat sheets" used for perfecting his dinners. Check out the unique recipe diagrams he uses. As the headline title of the site asks, "Have an analytical mind? Like to cook? This is the site to read!"

One For Fun!

Blinded Me With Science Songs

<http://www.science-groove.org/MASSIVE/>

If you were looking for information on over 1700 songs of science and math, you want the MASSIVE database. The MASSIVE (Math And Science Song Information, Viewable Everywhere) database covers the silly to the sublime, the basic to the seriously advanced. You may search the database by a variety of factors, including title, performer, writer, or keyword. Results are shown in a table with the name of the song, the performer and writer, a link to the lyrics, either a direct sound clip link or a link to a page with sound clips, and a pointer to an order page to purchase.



Welcome back, LT Kaltenbach!

U.S. Army Reserve first lieutenant Kelley Kaltenbach stopped by earlier this month to say hey to the Wilmington District after being deployed to Iraq. Kaltenbach is assigned to C Company, 252 Armor of the North Carolina National Guard. While in Iraq his unit operated with the 30th Brigade of the 1st Infantry Division. At the District, Mr. Kelley Kaltenbach is a Geo Tech Student Trainee.

Retiree Report

Attendees: Sylvia and Rex Phillips, Max Grimes, Joe Lewis, Ron Fascher, Cheryl and Ed Shuford, Doris and Ken Old, Gloria and Paul Woodbury, Virginia Uzzell and Lillie Robinson, Betty and Eric Matzke, Kay and Buddy Johnson, Bob Doetsch, Lloyd Tyndall, Edith Vithalani, Bettye and Bob Swart.

In November, Buddy Johnson toured several historic sites in Washington, D.C. with the WWII veterans group, ROMEO Club, out of Morehead City. Included in these sites was the WWII Memorial, White House, Holocaust Museum, and others.

Betty and Eric Matzke went to Nashville, TN in November for the Christmas programs at the Grand Ole Opry Hotel Complex.

Sylvia and Rex Phillips visited with Reid, Lauren, and Susan in Raleigh for Christmas. They got snow bound for an extra day. Reid gave Susan a diamond, so they guess they will have a new daughter-in-law soon. Keith and Ingrid moved into their new home New Year's weekend.

Lloyd Tyndall is helping the St. Johns #1 Masonic Lodge by acting as Finance Chairman of the 250th anniversary of the founding of the Lodge in Wilmington. On 27 December, a historic marker was dedicated at 3rd and Orange Streets near the old St. Johns Lodge building, now the Children's Museum.

Ed Shuford learned that Bill Thornton has experienced some health problems, but he is recovering nicely. He and Joy live at 24104 Christian Lane, Athens, Alabama 35611, telephone 256- 233-7732.

Bettye Swart had a five-day stay at the hospital for some surgery to correct a problem which had caused her hemoglobin to get extremely low over Christmas holidays. She is doing fine now. We are trying to get her to rest just a little.

We continue to meet on the 1ST THURSDAY OF THE MONTH AT THE MCDANIEL'S CREAMERY ON COLLEGE ROAD.

January 2005

Corps Family News

Rachel and John Edge are the proud grandparents of Eric Skylor McKeithan who was born December 12th. He weighed in at nine pounds, two ounces and was 22 inches at birth. His parents are Cecil & Shawna Edge McKeithan.

Harry D. Immel (Hank), seasonal Park Ranger with John H. Kerr, is the proud grandfather of a baby boy, John Harrison Lawrence, born Sunday, January 9, 2005 at 9:51 p.m. John weighed 6 lbs. 11 oz. and was 19 inches long. His parents, Jo and Scott Lawrence (Hank's daughter and son-in-law) are doing fine. Grandfather Hank is feeling pretty proud too.

Justin McCorcle's wife Sarah is heading to Uganda for a three-week teacher exchange trip where she'll be visiting classrooms and helping to teach conservation principles to teachers throughout Africa. She promises to bring back some great digital pictures.

Tarry and William Boyd, children of Blair Boyd, participated in a bake sale that raised \$1,500 in tsunami relief funds on January 9th. The final total reached more than \$1,600.



Reaching Out

Last Fall, during the 16th Annual Hispanic National Achievement Award Corporation Conference in Pasadena, California, Lieutenant General Carl A. Strock presented the 2004 Hispanic National Achievement Award Corporation award in the category of Professional Achievement to Mr. Rolando Serrano, Wilmington District.



HEUSINKVELD PHOTO

*"I have a dream
that my four children
will one day live in a
nation where they will
not be judged by the
color of their skin,
but by the content of
their character."*

– Dr. Martin Luther King, Jr.
Aug. 28th, 1963

Dorothy DeShields, a member of the New Hanover County Board of Education, was the guest speaker during the SAW observance of Dr. Martin Luther King, Jr. Day. Pictured from left are Betty Brown, Tony Carter, Ms. DeShields and COL Ray Alexander.

Dorothy DeShields, the featured guest speaker of SAW's observance of Dr. Martin Luther King, Jr., is a graduate of the former Williston High School, got her undergraduate degree from Saint Augustine's College and her Master's Degree from UNCW. She's a newly elected member of the New Hanover County Board of Education and was instrumental in developing and implementing the award winning Magnet Program which stresses innovative approaches to learning that maximize student potential. She's a lifelong educator who's passionate about teaching. Ms. DeShields, who also serves on the Board of Directors of the Community Boys and Girls Club and is a consultant to the North Carolina PTA Board of Directors. Despite her academic credentials and love of teaching, she reports that sometimes she still finds herself judged by the color of her skin rather than the content of her character. As an example, she related an experience of shopping in a local store, casually dressed in baggy clothes. She had just walked from the main store with a bag of items she just bought into another section of the store when a clerk asked her where she was going in a tone that made it clear to Ms. DeShields that she somehow fit the clerk's mental image of a 'most likely thief'. Incidents like these, she said, motivate her to keep preaching the words of Dr. King. Her words were a good reminder to all of us – always check your assumptions, and make the effort to know what's inside the head and heart of those you encounter every day.

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